CLAIMS

1. An optical pickup unit (OPU) assembly comprising:

a moveable structure;

a moveable voice coil motor (VCM) component that produces a movement of the moveable structure in response to an input signal;

an encoder configured to read a pattern on the moveable structure and generate an output signal corresponding to the movement of the pattern as the input signal is applied for a period of time; and

a controller that receives the output signal and calculates a calibration factor relating the movement to the input signal.

2. The OPU assembly of claim 1 wherein the moveable structure comprises a lens to read data from and to label an optical disc.

3. The OPU assembly of claim 1 wherein the controller, using the calibration factor, calculates an adjusted input signal to offset the position of the moveable structure.

4. The OPU assembly of claim 1 further comprising a second moveable VCM component that produces movement in a second direction orthogonal to the first direction responsive to a second input signal, wherein a second encoder is configured to read a second pattern on the second moveable VCM component and generate a second output signal corresponding to movement of the second input signal and the controller receives the second output signal and calculates a second calibration factor.

5. The OPU assembly of claim 1 wherein the input signal is a voltage signal.

6. The OPU assembly of claim 1 wherein the input signal is a periodic triangle wave.

7. The OPU assembly of claim 1 wherein the input signal is a periodic sine wave.

8. The OPU assembly of claim 1 wherein the input signal is a mechanical vibration.

9. The OPU assembly of claim 1 wherein the encoder is a reflective encoder.

10. The OPU assembly of claim 1 wherein the encoder is a transmissive encoder.

11. The OPU assembly of claim 1 wherein the pattern is part of a code strip comprised of alternating light and dark stripes.

12. An optical disc drive that comprises the OPU assembly of claim 1.

13. A method comprising:

applying an input signal to a voice coil motor (VCM) component that includes a pattern, wherein the VCM component is caused to move in a particular direction;

measuring movement of the pattern in response to the applied input signal, and

determining a change in the input signal corresponding to a particular amount of pattern distance movement.

14. The method of claim 13, further comprising calculating a calibration factor based on the determining by dividing the change in input signal by the amount of pattern distance movement.

15. The method of claim 13, wherein the input signal is a time-varying signal.

16. The method of claim 13 wherein the input signal is a voltage signal.

17. The method of claim 13 wherein the input signal is a periodic signal.

18. The method of claim 13 wherein the pattern includes light and dark stripes of a known width.

19. The method of claim 13 wherein the direction is in a "z" axis direction perpendicular to an optical disc.

20. The method of claim 13 wherein the direction is in a "track" direction parallel to an optical disc.

21. The method of claim 13 wherein the direction is in a "tilt" direction angular to an optical disc.

22. The method of claim 13 further comprising calculating an offset input signal based on the calibration factor, the offset input signal adapted to cause the VCM component to move an offset distance when applied to the VCM component.

23. The method of claim 22 wherein the offset distance is a focus offset distance used in labeling an optical disc.

24. The method of claim 22 wherein the offset distance is a radial positioning offset distance used in labeling an optical disc.

25. The method of claim 14 further comprising adjusting for drift by repeating the applying, measuring, determining, and calculating.

26. A processor-readable medium comprising processor-executable instructions for measuring actual movement of a lens in an optical pickup unit assembly, the processor-executable instructions comprising instructions for:

applying an input signal to a moveable voice coil motor (VCM) component that moves the lens in a particular direction;

measuring movement of a pattern on the VCM component in response to the applied input signal;

determining a distance of pattern movement corresponding to a change in the input signal; and

calculating a calibration factor based on the distance of pattern movement and the change in the input signal.

27. The processor-readable medium of claim 26 wherein the determining is performed for more than one time period, and the calculating is based on the averages of the time periods.

28. The processor-readable medium of claim 26 further comprising determining an offset input signal to move the VCM component to an offset distance based on the calibration factor.

29. An optical disc drive (ODD) comprising:

means for applying an input signal to a VCM component that moves a lens in a direction relative to an optical disc;

means for measuring a movement of a pattern on the VCM component responsive to the input signal;

means for determining the amount of pattern movement resulting from a change in the input signal; and

means for calculating a calibration factor based on the amount of pattern movement resulting from the change in the input signal.

30. The ODD of claim 29 further comprising adjusting means for moving the VCM component to an offset position using the calibration factor.